

## ABSTRACT

Building-to-building over the air transmission of optical data is a growing area of data communications. The fast growing use of bandwidth mandates the use of over the air transmission equipment capable of similar performance as the performance of the fiber optic transmission, for distances of 3-10 Km.

Transparent transmission is important, to enable seamless growth from low data-rare to Gbps rates, and then to Dense Wavelength Division Multiplexed (DWDM) transmission of several wavelengths. The only way to achieve the required performance is with narrow, directable beams. This patent application discloses Micro-Electro-Mechanical-Systems (MEMS) mirror based, over the air, optical data transmission system. A narrow optical beam is used and a MEMS mirror fine-tunes the aiming of the beam to track building movement, vibrations etc.